

ABSTRACT

A deflector by-pass valve for engine exhaust gas, used with an exhaust gas recirculation system on an automobile, is integrated with the cooling system, and located before the inlet for the engine's hot gas to the water/gas heat exchanger of the EGR system. The deflector by-pass valve is activated by a vacuum/pressure pneumatic system and actuated by an electric signal from the engine's electronic control center. Its main purpose is to conduct the gas through the heat exchanger/gas cooler when cooling is required, or to recycle the gas directly to the engine, without it passing through the heat exchanger when the gas is below the minimum limit for cooling.